

CLAIMS

1. A method for the control of a drive train (1) of a vehicle, especially an all-terrain vehicle, said vehicle being equipped with a driving machine (2) with a multi-group transmission (4), with an output means, and with a control apparatus, whereby the multi-group transmission (4) consists of at least one automatic transmission (8) and a subsequently connected range group (9), and whereby, upon a change of ratio in the range group (9)

a) the drive train (1) is relieved of function by means of a change of the torque (m_{mot}) of the motor 2,

b) a closable shifting element (24, 25) of the range group is closed,

c) an openable shifting element (24, 25) of the range group (9) is synchronized and opened, and

d) a ratio of the automatic transmission (8) is changed in such a manner, that a change in ratio of the multi-group transmission (4) is less than that of an unassisted change of ratio of the range group (9),

therein characterized, in that achieved is a speed of rotation (n_{mot}) of the motor (2) by means of a change of a transfer capability of at least one shifting element of the automatic transmission (8) to one of the equivalent connective speeds of rotation ($n_{\text{mot-a}}$) ratios of the multi-group transmission (4) at which the closable shifting element (24, 25) of the range group (9) is synchronized.

2. A method in accord with claim 1, therein characterized, in that a demand of a driver ($m_{\text{mot-f}}$) for changing the torque (m_{mot}) of the motor (2) during the changing of the ratio of the range group (9) can only be carried out upon the conclusion of the said ratio changing, whereby a change of the motor torque (m_{mot}) of the driving machine (2) to relieve the drive train (1) from the control apparatus is activated by control.

3. A method in accord with claim 2, therein characterized, in that following the change of the ratio of the range group (9), the demand of the driver ($m_{\text{mot-f}}$) for the changing of the torque (m_{mot}) of the motor (2) can be carried out.

4. A method in accord with one of the claims 1 to 3, therein characterized, in that for the establishment of the connective speed of rotation ($n_{\text{mot-a}}$) of the motor (2) the capability of transfer from openable shifting elements of the automatic transmission (8) is reduced and a capability of transfer of closable shifting elements of the automatic transmission (8) is increased.

5. A method in accord with one of the claims 1 to 4, therein characterized, in that upon the existence of the connective speed of rotation ($n_{\text{mot-a}}$) of the motor (2), a capability of transfer of the openable shifting elements of the automatic transmission (8) is cancelled, while the closable shifting elements of the automatic transmission (8) are held in a slipping state.

6. A method in accord with one of the claims 1 to 5, therein characterized, in that the closable shifting elements of the automatic transmission (8) and the closable shifting element (24, 25) of the range group (9) are completely closed when in the synchronized condition.

7. A method in accord with one of the claims 1 to 6, therein characterized, in that the change of ratio of the range group (9) and the therewith associated change of the ratio of the automatic transmission (8) is done automatically upon the presence of a defined operational condition.

8. A method in accord with one of the claims 1 to 7, therein characterized, in that the change of ratio of the range group (9) and the therewith associated change of ratio of the automatic transmission (8) is done by the expressed, optional action of the driver.

9. A method in accord with one of the claims 1 to 8, therein characterized, in that the control apparatus is composed of a motor torque control device, an automatic transmission control device, a range group control device, which, are communicatively bound to one another and exchange signals, or wherein the automatic transmission control device and the range group control device are mutually combined to form a common control apparatus.